

# SMD 1582.4MHz SAW Filter

**ABSES5AF-L100KM**

Request Samples



Check Inventory



**1.1 x 0.9 x 0.7 mm**  
RoHS Compliant

## Features

- GPS/GLONASS/BEIDOU/GALILEO Support
- Smallest Form Factor 1.10 x 0.9 x 0.70 mm
- Low Insertion Loss
- Industrial Grade -40°C ~ +85°C
- Maximum Input Power: 15dBm
- RoHS Compliant

## Applications

- RF Modules
- Transportation & Telematics
- Asset Tracking / Fleet Management
- UAVs, Robotics & Autonomous Vehicles
- Micro-Mobility Solutions
- Precision Agriculture

## Electrical Specifications

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (fc)	-	1582.4	-	MHz	-
Insertion Loss	-	1.8	2.2	dB	1559.05 - 1563.15 MHz
	-	1.2	1.5	dB	1574.42 - 1576.42 MHz
	-	1.5	2.0	dB	1597.78 - 1605.66 MHz
Amplitude Ripple	-	0.2	1.0	dB	1559.05 - 1563.15MHz
	-	0.2	1.0	dB	1574.42 - 1576.42MHz
	-	0.2	1.0	dB	1597.78 - 1605.66MHz
Attenuation	35	38	-	dB	10 - 925 MHz
	38	42	-		1427 - 1463 MHz
	38	42	-		1710 - 1785 MHz
	38	42	-		1850 - 2025 MHz
	40	45	-		2300 - 3000 MHz
	25	30	-		4800 - 5000 MHz
Group Delay	-	16	20	ns	1597.78 - 1605.66 MHz
VSWR	-	1.6	2.0	-	1559.05 - 1563.15 MHz
	-	1.2	2.0		1574.42 - 1576.42MHz
	-	1.3	2.0		1597.78 - 1605.66MHz
Group Delay Ripple	-	4	9	ns	1559.05 - 1563.15MHz
	-	2	5		1574.42 - 1576.42MHz
	-	3	6		1597.78 - 1605.66MHz
Input Power Level	-	-	10	dBm	
DC Voltage (V)	-	-	3	V	

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## Mechanical Specifications

Parameters	Specifications
Dimension	1.1 x 0.9 x 0.7 mm
Mounting Type	SMD Mount

## Environmental Specifications

Parameters	Specifications
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature Range	-40°C ~ +85°C
MSL level	MSL 3
ESD	N/A

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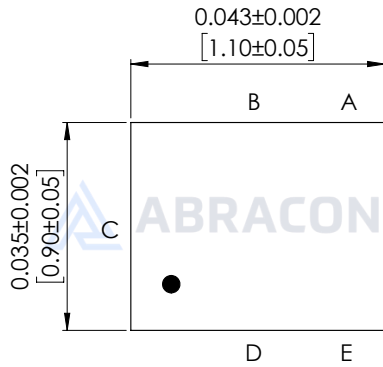
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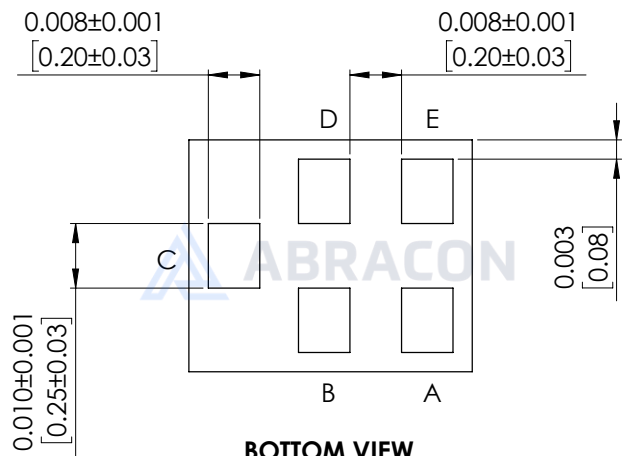


**TOP VIEW**

Unit: inches[mm]



**FRONT VIEW**



**BOTTOM VIEW**

Unit: inches [mm]

Pin No.	Description
C	Input
A	Output
B,D	Case Ground
E	To be Grounded

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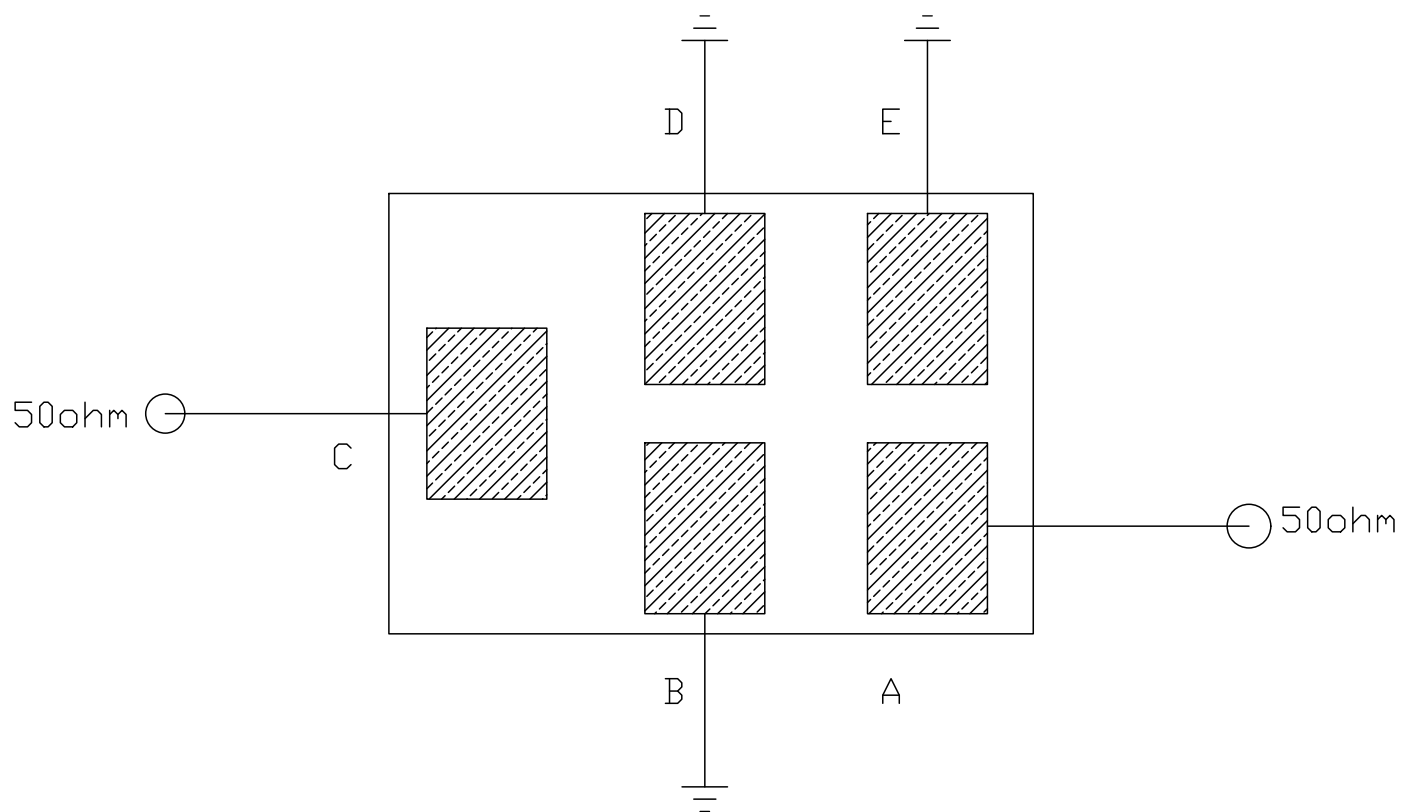


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## Measurement Circuit



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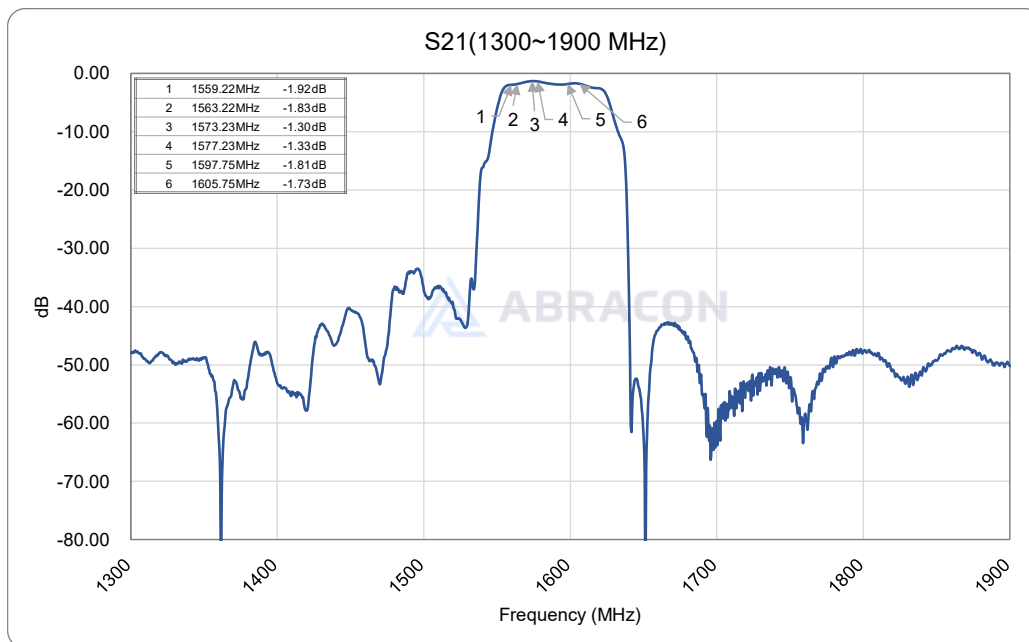
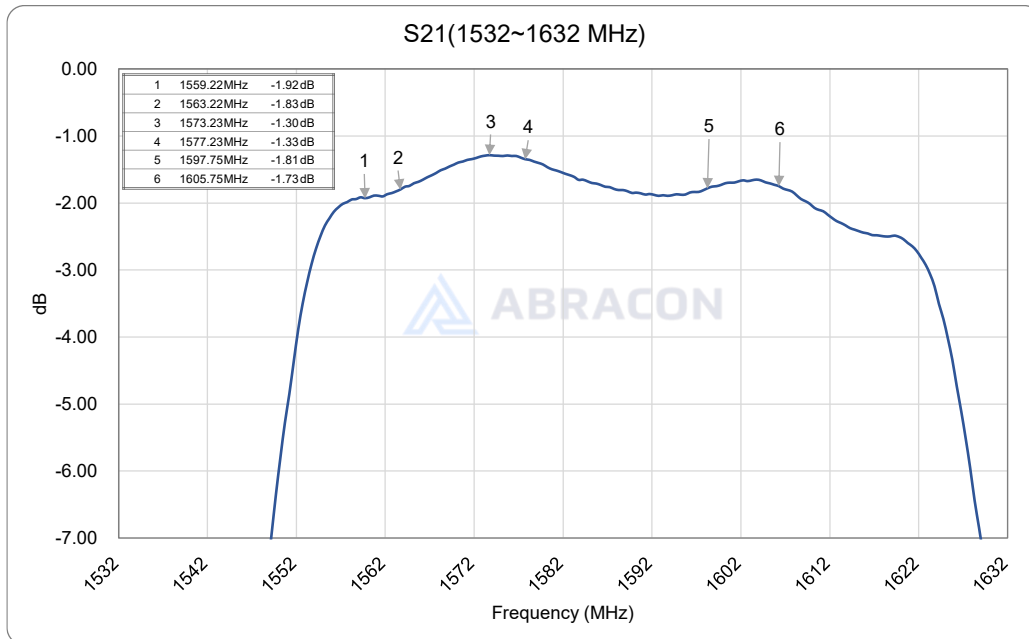
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## Frequency Characteristics

S21 narrow band



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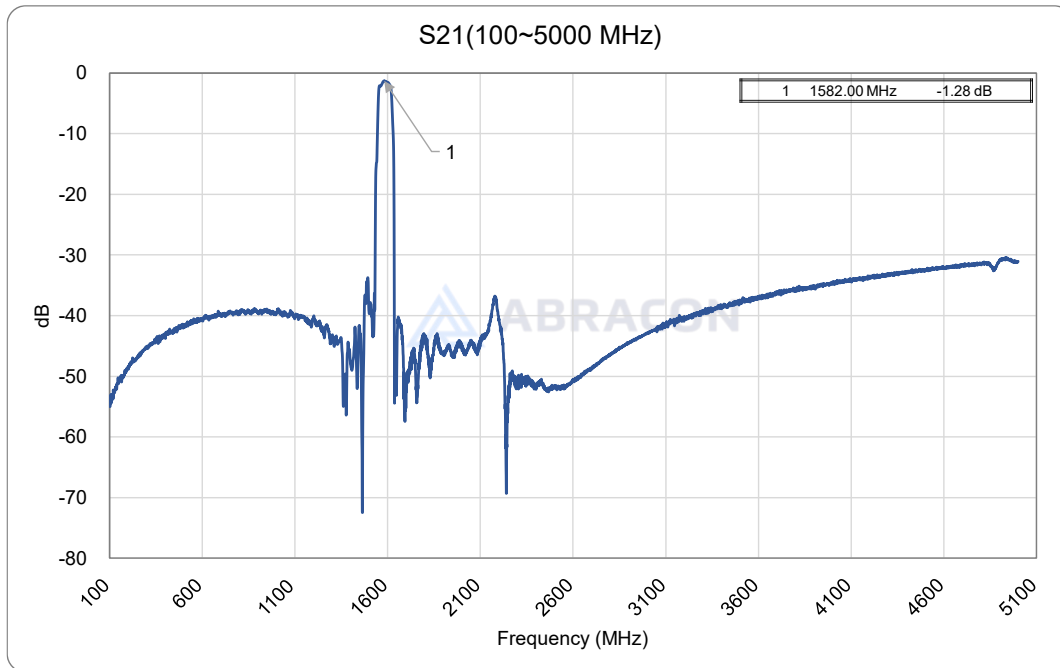


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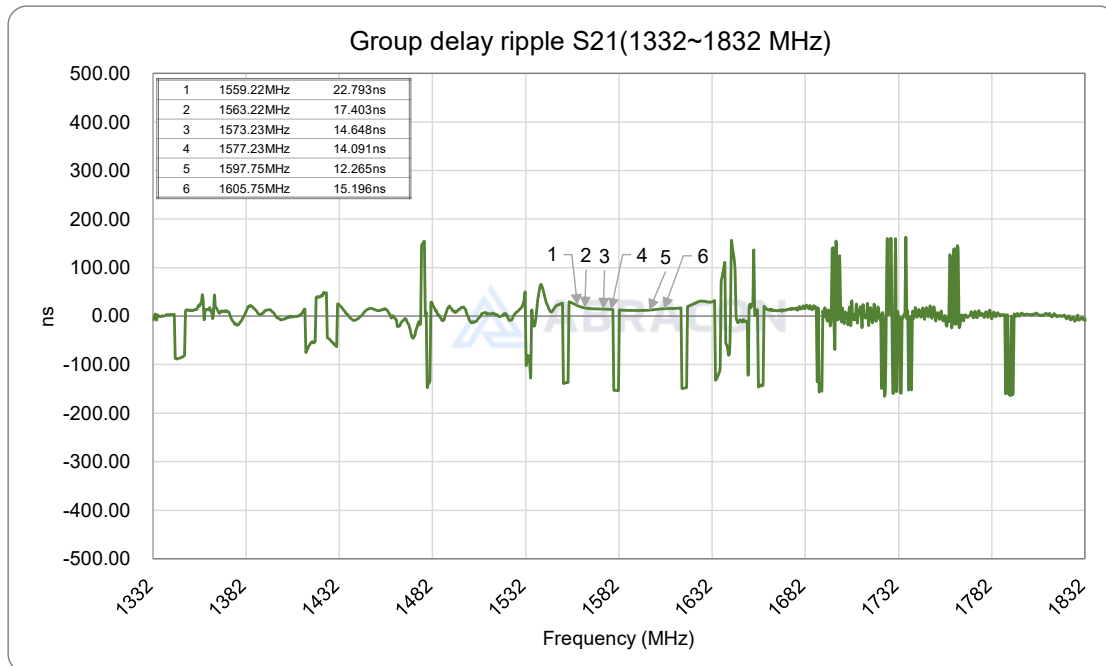


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S21 wide band



Group Delay Ripple



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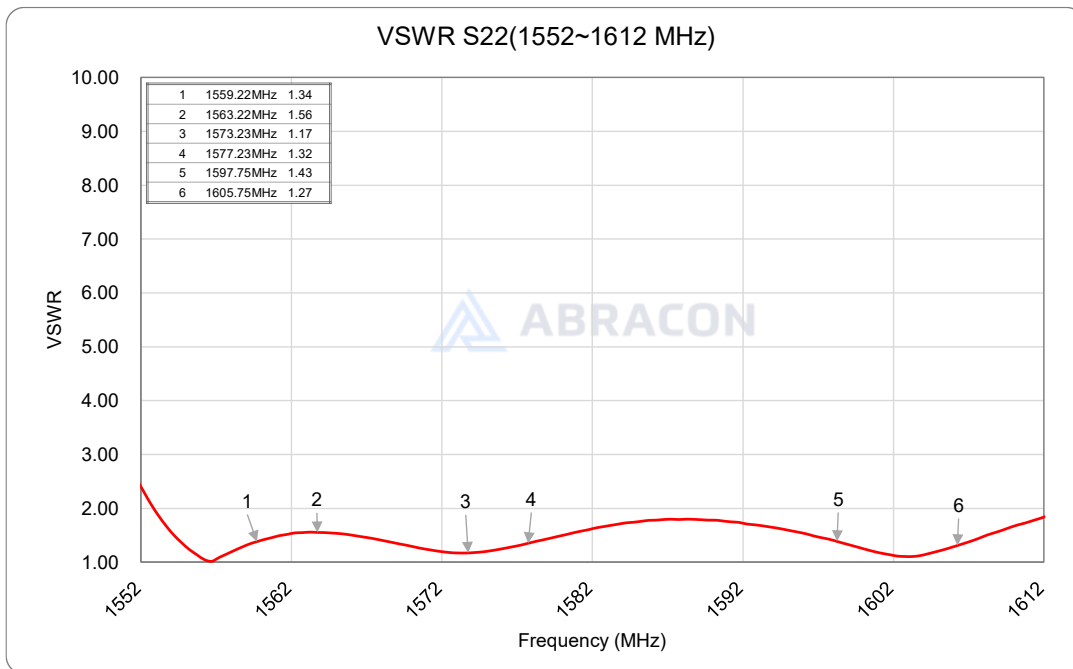
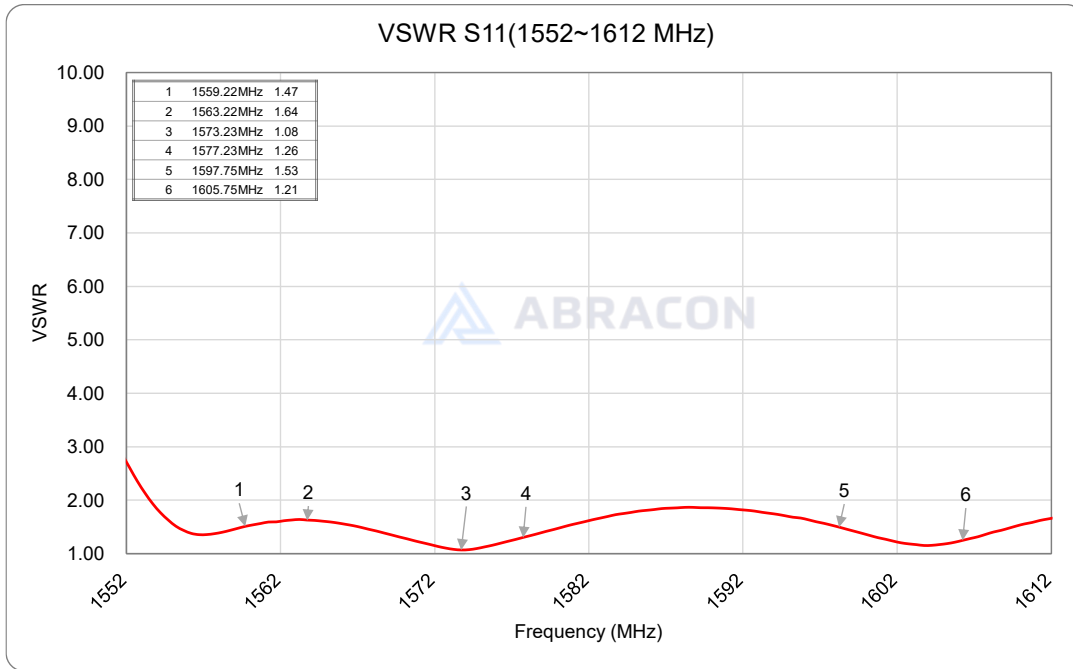


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VSWR (S11 & S22)



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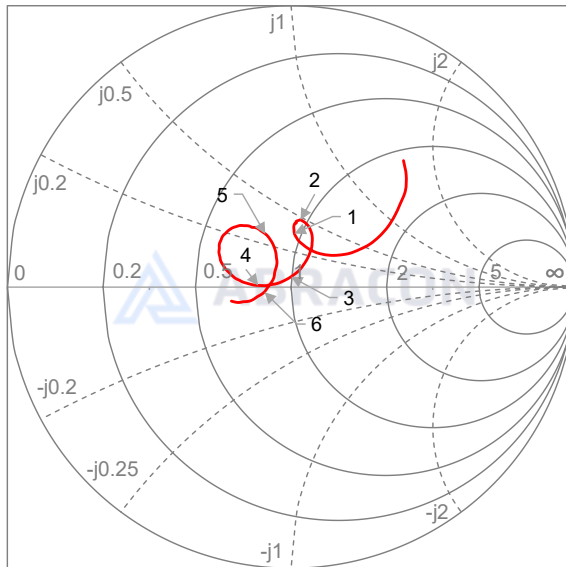
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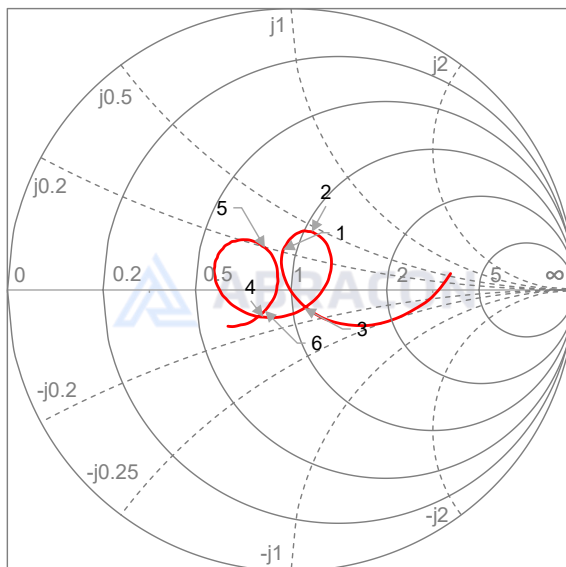
Smith Chart (S11 & S22)

Smith chart S11 (1550~1610MHz)



1	1559.22MHz	47.5775Ω	18.7375Ω	1913pH
2	1563.22MHz	47.5369Ω	24.1148Ω	2455pH
3	1573.23MHz	49.8680Ω	3.6867Ω	373pH
4	1577.23MHz	39.6650Ω	0.4694Ω	47pH
5	1597.75MHz	39.0527Ω	15.4029Ω	1534pH
6	1605.75MHz	41.4064Ω	-1.4434Ω	69pF

Smith chart S22 (1550~1610MHz)



1	1559.22MHz	45.4569Ω	13.2634Ω	1354pH
2	1563.22MHz	52.7546Ω	22.8961Ω	2331pH
3	1573.23MHz	54.4505Ω	-7.0770Ω	14pF
4	1577.23MHz	40.3826Ω	-7.9463Ω	13pF
5	1597.75MHz	39.8432Ω	12.3622Ω	1231pH
6	1605.75MHz	41.1180Ω	-6.1720Ω	16pF



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## Reflow Profile [JEDEC J-STD-020]

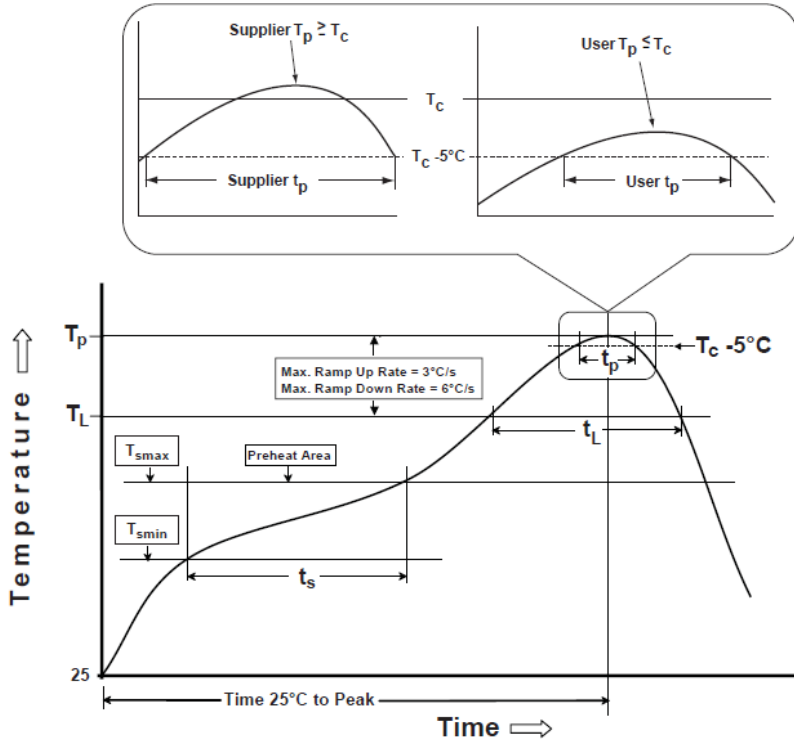


Table 1

SnPb Eutectic Process  
Classification Temperatures ( $T_c$ )

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2

Pb-Free Process  
Classification Temperatures ( $T_c$ )

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350-2000	Volume mm <sup>3</sup> >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum ( $T_{smin}$ )	100°C	150°C
Temperature maximum ( $T_{smax}$ )	150°C	200°C
Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate ( $T_{smax}$ to $T_p$ )	3°C/sec. max	3°C/sec. max
Liquidous temperature ( $T_L$ )	183°C	217°C
Time at liquidous ( $t_L$ )	60 - 150 sec.	60 - 150 sec.
Peak package body temperature ( $T_p$ )*	see Table 1	see Table 2
Time ( $t_p$ )** within 5°C of the specified classification temperature ( $T_c$ )	20 sec.	30 sec.
Ramp-down rate ( $T_p$ to $T_{smax}$ )	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

\*Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

\*\*Tolerance for time at peak profile temperature ( $t_p$ ) is defined as supplier minimum and a user maximum.

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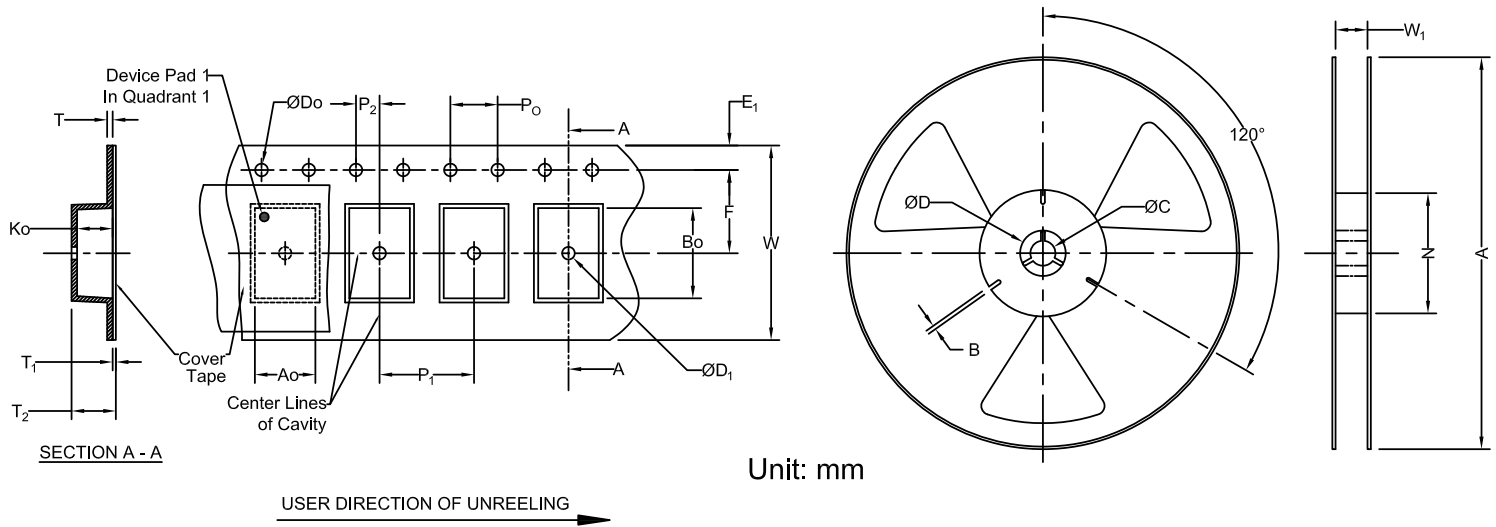


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## Packaging

### Tape & Reel (10,000 pcs / reel)

#### 1. Tape & Reel Dimension



#### Carrier Tape Specifications (mm)

Do	D <sub>1</sub>	E <sub>1</sub>	P <sub>0</sub>	P <sub>2</sub>	T	F	P <sub>1</sub>	W	A <sub>0</sub>	B <sub>0</sub>	K <sub>0</sub>	Reel Qty
1.50 ± 0.1	0.5 ± 0.1	1.75 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	0.2 ± 0.03	3.5 ± 0.05	2.0 ± 0.1	8.0 ± 0.3	0.95 ± 0.05	1.15 ± 0.05	0.68 ± 0.04	10,000

#### Reel Specifications (mm)

A	W <sub>1</sub>	N	C	B
178.0 ± 0.05	9.0 ± 0.3	60 ± 0.2	13.3 ± 0.2	2.2 ± 0.2

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